

# ARIZONA SILVER BELT.

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[Established 1878]

## THE MINING FIELD.

### A Brief Portrayal of the Mining Industry of Arizona and the Great Southwest.

#### MINE AND MILL---SHAFT, CHUTE AND TUNNEL.

PROGRESS BEING MADE BY PROSPECTOR AND PROMOTER--THE MINING INDUSTRY THROUGHOUT THE GLOBE COPPER BELT--A WEEKLY RESUME OF TRANSPIRING EVENTS TERSELY TOLD.

##### THE OLD DOMINION.

The company is pushing the work in every department. The smelter is making a very satisfactory output of copper. For the past ten days no lime has been used in the furnace charge, and the experiment appears to be successful. The company has a very large amount of supplies on hand. Coke shipments have been discontinued, but there is still a large amount in transit from the east, in addition to some 50 cars between Bowie and Globe and about 25 cars in the railroad yard here.

##### THE BLACK WARRIOR.

Col. Jas. A. Fleming, who was in town from Black Warrior on Monday, spoke very encouragingly of the development of the company's Gold gulch property, on which an important strike of sulphide ore was recently made. Sinking is progressing very slowly, owing to the extreme hardness of the rock, but the quality of the ore has greatly improved. The road to Gold gulch will be finished in a week. A party of Black Warrior stockholders from Philadelphia are expected to arrive within a few days.

##### THE YOTAMBIEN.

We learned from Superintendent George Calder of the Pinto Creek Mining & Smelting company, that development work on the Yotambien mine is progressing satisfactorily, and the mine shows marked improvement. The company force of miners who are running a drift at the 130-foot level are in about 50 feet, and have opened a very fine body of sulphide. Ed Whelan, who has the contract for driving a 300-foot tunnel on the Yotambien, is assisted by James Whelan, Dan Egan and Frank Rea. They are making rapid headway, having accomplished 102 feet the first month, and expect to complete the work within 90 days from date. This tunnel will cut two or more ledges at a depth of 160 feet and a drift from the end of the tunnel to a point underneath where the mine force is now working would give a depth of 250 feet from the surface. Mr. Calder is having ore sorted and sacked, and expects to make the first shipment of ore from the Yotambien in about 10 days.

##### A PROFITABLE MINE.

Finletter & Harvey have a very valuable and productive mine in the Copper Hill property, situated near Oak Springs, from which they have been shipping ore for several months. The tunnel has been driven 100 feet and an upraise completed, and they are now sinking a winze and blocking out ore. There is now several thousand dollars worth of shipping ore in sight. There are 21 feet of rich carbonate ore in the bottom of the winze. Returns from the last shipment of ore to the El Paso smelter gave a value of 34.4 per cent copper. Another shipment will be made within two or three weeks.

##### NEW MINING CAMP.

Camp Keno is situated a few miles north of Gun Creek, near Soldiers' camp, in northeastern Gila county. The first locations were made about the first of the present year, by John Taylor of Colorado, who had recently returned from Alaska. Mr. Taylor sank several prospect shafts from 10 to 30 feet deep, and about six weeks ago J. M. Sandridge and he discovered a small lead of high grade copper ore. A working sample of the ore, shipped to Globe and sold to Westmeyer & Anders, gave a return of 25.2 per cent copper, \$9 gold, and 11 ounces silver. Messrs. Taylor and Sandridge are down on this lead about 25 feet, at which depth the vein is about 9 inches wide and the pay streak 3.2 inches. The hanging wall is porphyritic lime. The Keno bids fair to be a valuable mine.

W. M. Lewis and J. W. Rink have acquired a valuable claim at Keno camp, and have men at work on it, taking out at 20 feet high grade copper ore. Mrs. Moore, also of Globe, is having location work done on a large body of low grade copper ore, which looks well. The presumption is strong that a large ledge of copper and gold ore passes through Camp Keno

and Messrs. Taylor and Sandridge are confident that it will soon be uncovered.

##### LOCAL MINING NOTES.

The Globe Sampling Works have been quite busy this week.

We are informed that Charlie Miller, who is doing development work on a group of copper claims on Pinto creek, owned by Dr. T. S. Collins and himself, has encountered sulphides, and appearances are encouraging for a good strike of ore.

At the Cole and Goodwin mines the work of sinking was interrupted this week by the breaking of the friction on the whim, which necessitated sending to Denver for a new one. The shaft is down 100 feet in ore which continues to improve in quality.

E. M. Bashore, who has disposed of his jewelry business, will give his attention to mining. Mr. Bashore is doing the location work on his group of copper claims, adjoining the property of the American Mines Development Co., on Pinto creek.

The Howie Copper company have increased their force of miners, now employed sinking a winze on the Wetumpke claim. They have an excellent showing of ore.

##### Territorial and General.

Copper is quoted dull at 16s for Lake.

The production of the gold mines of Russia in 1899 was \$23,953,017.

The Helvetia Mining company of Pima county, Ariz., have 390 men on the pay roll.

The report is denied that the Guggenheim smelters are to be absorbed by the trust.

The current bi-monthly dividend of the United Verde is 75 cents, which is an increase of 25 cents over the usual amount.

The greatest depth ever attained on the Comstock, Nevada, was in the North End, in the Union Con.--3,350 feet in 1883.

Chas. F. Lucas, who has the contract for all work on the Ray mines, is required to extract 250 tons of ore every 24 hours.

Col. C. C. Bean, who is operating mines near Gila Bend, was in the Mineral Creek district last week examining mines.

Report is that a strong vein of \$300 a ton gold ore has been struck in the 100-foot level of the Cash mine, Haysampa district.

Another strike of rich copper ore is reported to have been made in the Lake Superior & Development company's property (the Costello group) at Bisbee.

The work of sinking the main working shaft, on the Mammoth mine, to a depth of 1,000 feet, is progressing rapidly since the new pump was installed, says the Blade.

Superintendent Geo. P. Blair of the Mammoth-Collins mines, has gone to Milwaukee to attend the mining congress which will convene in that city on the 19th inst.

Cripple Creek, Col., shipped 60,000 tons of ore last month, 47,112 tons were treated at the cyanide and chlorination plants and smelters. Its gross value was \$2,050,000, an increase of 34 per cent over April.

In case of an attack on a mineral location of land that has once been adjudged mineral in character, the abandonment or forfeiture of the claim must be shown by clear and unmistakable evidence.

Last week, says the Western Mining World, a most unusual specimen of copper ore for the Butte district was found in the bottom of the pump sump in the Sioux Chief mine, one of the Speculator group. It was an irregular mass of native copper filled in with white quartz. It could not be broken with a hammer and to separate the piece it was necessary to put it in a vice and wrench it apart by the use of heavy pinchers. It naturally attracted considerable interest and speculation.

A rich strike of gold ore is reported from the Ben Butler mine situated south of Kingman, near the Sandy. The strike was made at a depth of 120 feet. This is one of a group owned by the Midas company.

G. W. Hull arrived in Jerome last week from the east and reports that arrangements have been made to push work on all his mining properties. He left a few days later for California, from where he will go on to Boston.

The Boston Herald, of June 8, says: The condition at the burning shaft of the Calumet & Hecla is so much improved that it is hoped that operations can be resumed in some of the idle shafts some time next week.

Latest reports from the Calumet & Hecla are favorable. The temperature of the shaft has fallen to 70 degrees, and early opening is contemplated. It is said that Calumet will sell no more copper until the mine is reopened and the damage measured.

The Penn Gold Mining company is said to be so well satisfied with the results of the working of ore from their Mud Hole mine through their Huntington mill that they will put up another mill of the same character and capacity upon that property, which is located on Lynx creek.--Courier.

The main shaft on the Silver Age, at Chloride, Mohave county, is 120 feet deep and is being sunk rapidly. The vein is large and besides gold, silver and lead the ore contains 8 per cent copper. The Mineral Wealth says: This is destined to be one of the great mines of the district.

The old Accidental mine, being operated by Mr. Duran, is said to be a bonanza property. Very rich ore has been struck in the lower levels, and the vein is large. This mine, says the Prescott Courier, was worked in the early '60s by Willard Reil, Herbert Brown and Dick Elliott.

We understand, says the Florence Blade, that seventeen tons of ore shipped from the Golden Quiver mine, at Mineral Hill, last week, averaged at the smelter 52 per cent lead. There are several hundred thousand tons of the same kind of ore in sight in this mine. Mineral Hill will be a booming camp yet.

Report comes from Helvetia through Mr. Kimball that some very fine strikes have been made there within the last few days. In the Isle Royal the company encountered a large body of high class ore on Sunday. The smelter has been cramped by the lack of coke, when they are unable to haul in fast enough. The company has purchased a large number of mules and are busy hauling in timber for the mines.--Citizen.

A dispatch from Santa Fe says that S. G. Burn, manager of the Galisteo company, operating on the Ortiz grant has made the official announcement that the new Edison process for extracting gold from gravel at the cost of but a few cents per ton of gravel has proved a success at the experimental mill at Dolores. The nature of the process is kept a secret. Thomas B. Edison will be at Dolores this month to make the preliminary arrangements for the erection of a large plant.

The Jerome correspondent of the Republican says: One of the best known and most successful smelters in Arizona, J. H. Canavan, arrived from Los Angeles Friday and returned Saturday. He came to expect a mine belonging to local people for capitalists of California. His report will be favorable to the claims examined, and will probably cause considerable money to be expended in this district in prospect work. Mr. Canavan was for years in Globe.

Harry Weatherspoon, who is up from Nacozari, informed the Tombstone Prospector that about 1,000 men are employed in all the departments of the big company's mines, smelters, mills, etc. The work of pushing the long tunnel, to facilitate the handling of the ore, is well under way. All the ores will be concentrated before treated at the smelters. The ore reserves at the mine show it to be one of the world's greatest copper deposits and will be a prominent factor in the world's supply of red metal.

The transfer of the Elkhart mines at Chloride, Mohave county, to an English syndicate, is announced. Dr. Theo. Comstock, general manager of the Elkhart, and a large stockholder, conducted the negotiations, which have been pending for the past three months, with some interruption due to the Transvaal war. The new syndicate is composed of heavy London capitalists, who will work upon a larger scale than heretofore. Within a few weeks the details of the deal will be so far completed that work at the mines will be fully resumed.

J. S. Douglas is in town inspecting the Verde Queen mine and smelting plant, says the Jerome correspondent of the Republican. Mr. Douglas, who is one of the principal owners of the property, is the well known Bisbee

mining man. He feels certain the Verde Queen will prove a second Copper Queen, as the formation is similar in the two properties. Mr. Douglas is well pleased with the appearance of the property. The smelter was blown in again Friday morning, and has been running steadily ever since.

A Jerome dispatch, of June 11, says: This morning about 1 o'clock there was a serious cave-in on the 500-foot level of the United Verde mine, in which John Gray of Salt Lake City, Utah, and Jed Torreno lost their lives. Robert Northers of London, was slightly injured. Jasso Meikle, laborer, had his arm and thigh broken, and received internal injuries likely to prove fatal. The two men killed did not meet instant death, but were slowly crushed by the settling mass of ore. Their cries for help were piteous, but when the rescue force reached them life was extinct.

C. W. Hayes of the Brooke-Hayes mines, situated about 40 miles from Nogales, was in town Wednesday. Mr. Hayes says the properties in which he is interested are turning out ore rich in gold, there being enough already on the dump to run the big stamp mill now being erected, a year. A short time ago Mr. Hayes refused \$150,000 in gold coin for his interests in the Brooke-Hayes gold properties, but he says his mines are not for sale. He is also interested with Col. Koneritzky in a number of other valuable claims in the Magdalena district, one of which was sold this week for a pretty figure.

Sinking on the new working shaft of the Lone Pine mine, one of the properties of the Arizona, Eastern & Montana company, has been suspended until the new hoisting and power drilling plant has been installed. The machinery is on the ground and work is now being vigorously prosecuted on the new plant. The Prescott Courier says: The time is not distant when the Lone Pine will be, next to the United Verde, the best equipped property in the county for opening up its ore bodies, as three power drills will soon be at work. The superintendent, Mr. Stickey, reports that the ore now encountered in the new shaft averages about \$40 in copper and gold.

The Jerome correspondent of the Republican says: Pipe for laying a 2,000 feet pipe line and a lot of cement, to be used in making a foundation for the new hoist engine, is at the depot for the Brookshire company, a branch of the G. A. Treadwell Mining company. The pipe will be laid from a spring to the Brookshire property to carry water for camp use. At present a force of 10 men is at work developing the property, but the force will be doubled as soon as the hoist engine is placed. A person would be surprised at the amount of work being done by mining companies in the vicinity of Jerome, if he should take a trip to all the camps where development work is going on.

An interesting event to the mining world will be celebrated this week at Eisleben in Germany, where ceremonies will be held in commemoration of the seven hundredth anniversary of the opening of the Mansfeld copper mines, which are still actively worked. These mines, says the Engineering and Mining Journal, antedate by a few years those of the Stora Kopparberg in Sweden, and are the oldest mines in the world which have been operated continuously, or with only brief interruptions. It is true that the Rio Tinto mines in Spain were worked by the Romans and the lead mines of Laurium in Greece by their Greek owners over 2,000 years ago; but there are gaps of centuries in the history of those mines. Many distinguished men, including the emperor of Germany, are to be present at Eisleben, and it will be a memorable event.

At the offices of the South Bisbee Copper company, in this city, says the Los Angeles Mining Review, it was learned this week that the company had let a contract to sink a 600-foot shaft on the Uncle Sam, one of the claims of the company's group at Bisbee, Ariz. This new shaft to be sunk will not interrupt the work in the main double-compartment shaft in which drifts are being run at different levels and shipping ore taken out. The location of this new shaft on the Uncle Sam claim is about one-quarter of a mile distant from the main shaft and one and one-quarter miles in a southerly direction from the famous Holbrook shaft on the Copper Queen's ground, and about 3,000 feet east of the White Tail Deer claim, also owned by the Copper Queen company, from which large quantities of rich copper have been taken.

The report is current in Chloride that the Tennessee has been sold to stockholders in the Elkhart company. The Western Miner and Financier says: The Tennessee is one of the best equipped and paying mines in the district, and no time has not been brought out to anything like its full

value of great possibilities until within the past eighteen months. Since then it has paid large and regular dividends to its stockholders, and everything has moved along in interrupted smoothness. The Tennessee is in close touch with the Elkhart mine, only one mine and claim separating them, and all three are on the same ledge and rich vein matter. The report goes on to say that the consolidation of the two mines into one company will cause new and vast improvements to be made in furtherances and preparation for the uninterrupted and economical working of the two mines.

The Phoenix Gazette states that the stockholders of the Cobre Grande, as represented by J. Henry Wood, last week received their first payment on their shares of stock. The stock of this company, or a majority of it, is held in pool and can only be sold as a whole. A New York syndicate proposes to buy the pooled stock and J. Henry Wood, acting for this syndicate, paid out to Arizona stockholders upwards of \$30,000. This money was all paid out in Arizona, Jerome getting a good share of it. The \$30,000 paid represents a 10 per cent payment upon the stock. The balance, \$233,000, will be paid in 60 days. Gus Hirschfeld will get \$1,000 out of the deal. Mr. Wood has waited patiently for many months for the consummation of the present deal and he feels highly elated over the success of the Cobre Grande stockholders. The men who have held the stock will make a good thing out of it, as it was bought at about 20 cents a share and the price paid by the New York syndicate was \$2.50 per share.

The third session of the international mining congress will be held at Milwaukee, Wis., commencing June 19, the program providing for a four days' session. Two predominating questions will engage the attention of the congress, says the Western Mining World: the creation of a department of mines with a cabinet minister and a revision of the United States mining laws. At the last session of the congress a committee was appointed with powers to frame a revision of the laws and a proposed bill was prepared and widely published throughout the mining states, but it met with much opposition, it being claimed that it appeared to be in the interest of large mine owners and not beneficial to the prospector and small owner. It is hoped that by reason of the congress meeting so far east that there will be large delegations from the eastern states and thereby interest aroused to the needs of the mining industry for legislation to foster and facilitate this great interest.

"Follow your ore," is the advice an experienced mining man gives, says an exchange. That depends. Of course a prospect should be followed until developments indicate the presence of a continuous body of ore. When its inclination and trend are ascertained, and the conditions are favorable a cross-cut tunnel may be run, or a vertical working shaft may be sunk. But there is no arbitrary rule which applies to mining. One must be governed by surrounding conditions. Follow your ore in a prospect. But in a camp of well established gold, silver or copper bearing rock, the dip and trend of which are known, the operator, possessing good sense, will be governed by the topography of his claim. He may sink a vertical working shaft to strike his lead at a certain depth, or he may run a tunnel to cross-cut it at such a depth as the initial work may determine. There is no arbitrary rule to carry on mining. Sound sense, to take advantage of all the conditions which surround a mining proposition, is the principal factor to success.

On the United Verde & Pacific about a mile from this place, says the Jerome Reporter, may be seen a little tent by all who pass by, and near it a shaft and pile of waste. The claim is known as the Divide, and around it are six more claims appropriately named. The property was bonded from Chris Harryhausen, for years foreman of the United Verde mine, by capitalists living in Rhode Island. Their interests are being looked after by that well known miner, J. F. Blandy, who has a force of men developing the claims. The croppings are iron, a formation similar to that overlying the United Verde mine. No trace of copper can be found in the capping, but that fact bears no weight with Mr. Blandy, who is a geologist and practical and experienced miner and having studied the formation has the confidence of his employers. The shaft is down 55 feet. The force will be doubled this week and the work continued day and night. A hoist will soon be put in and a sliding is now being extended to the Divide from the main line.

The Engineering and Mining Journal of June 9th published the full tables of mineral and metal produc-

tion of the United States in 1899 as prepared for the mineral industry, volume VIII. This production, valued at the mines or furnaces, amounted to \$1,211,361,861, the largest amount on record for the United States, or any other country. Deducting certain necessary duplications, the net value of the mineral production in 1899 was \$1,118,780,830, against \$799,518,033 in 1898, showing an increase last year of \$319,262,797, or 39.9 per cent. This great amount came partly from the increase in quantities and partly from general advances in values. The United States last year was the greatest producer of coal, salt, iron, copper, silver and lead in the world; also of many of the less important metals and minerals. The extent of our production is shown by the figures, which include 252,115,987 short tons of coal, 13,400,735 long tons of pig iron, 551,319,691 pounds of zinc, 217,085 tons of lead, 129,675 tons of copper, 67,129,834 ounces of silver, and \$70,096,021 in gold.

To find if a certain low grade gold or silver ore is susceptible of profitable concentration, take a weighed quantity of the dry pulverized ore passed through a 40-mesh screen, such as would be a fair average sample of the bulk of ore treated, say, one pound, after having previously assayed the sample. Pan this quantity carefully into a second pan, and repan until all the sulphurates are separated from the gangue, then dry and weigh the sulphurates and assay them. The weight represents the percentage of sulphurates the ore contains. Following is also a practical formula for estimating the percentage of sulphurates in quartz: Take 10,000 grains or 20.8 ounces of crushed ore, which will pass through a 40-mesh wire screen. Wash the ore very carefully in water or pan and rewash as long as sulphurates appear. Dry and weigh. Each grain of sulphurates will equal 1-100 of 1 per cent. If the sulphurates weigh 175 grains, the quartz contains 1 1/2 per cent of sulphurates; or, if twenty grains, 1 1/2 of 1 per cent. If the sulphurates are worth \$100 per ton, the value of sulphurates in each ton of ore is \$1.75; if 1 1/2 of 1 per cent--20 cents per ton. To test tailings, dry and weigh 10,000 grains; wash as above; dry and weigh the sulphurates; each grain will represent 1-100 of 1 per cent and a loss of 1 per cent if the sulphurates are worth \$100 per ton. Thus, if the 10,000 grains of tailings yield 3 1/2 grains of sulphurates, the loss is 3 1/2 cents per ton in sulphurates. If the sulphurates are worth \$80 per ton, multiply 60 by 3 1/2, and 2.1 cents is the value of the sulphurates in one ton of tailings; if they are worth \$75 per ton, multiply as above, and the value in each ton of tailings is 13.12 cents per ton in sulphurates.--Mining & Scientific Press.

The St. Louis Republic publishes the following interview with an Arizona miner, telegraphed from Washington, D. C. Speaking of the United Verde mine he said: "It is just the same as a mountain of twenty-dollar gold pieces." The hill of twenty-dollar gold pieces which he referred to is the United Verde mine in Arizona. "It is beyond any question of a doubt the greatest mine in the world. There is so much silver, gold and copper there that it makes one fairly dizzy to figure out how much. Senator Clark is almost the sole owner of the mine. The others shareholders have merely enough for the purposes of corporate organization. The profit is now \$1,000,000 a month. This is rather 5 cents too little rather than too much. There can be no possible doubt about the profits. Now the lowest level at which they are working is 500 feet. You know those are very shallow workings. Yet if they go no lower and keep on working as they now do, there is enough in sight to keep the mine running at the same monthly profit for fifty years. If the mine should be worked to make as much money as possible a tunnel would be projected at about a 2,500-foot level. It would come out a river and furnish plenty of water. Borings have shown that the ore is of the same quality to this depth. If the plan of the progressive engineers were adopted 25,000 men might be employed instead of 5,000. I would not even guess at what would be taken from the mine then. The ore bears gold, silver and copper. If there were only the same quantity of one of these metals the mine would be worth working for that alone. Not many miles away Senator Clark has enough property which the experts say is just as valuable as this. The title to this other property has been in litigation for about six years, but Senator Clark has won the final verdict. I do not know that the other property is to be developed at once. Arizona is in a very flourishing condition at present. The mining properties are getting on a much better footing. Formerly some of the Arizona enterprises had rather poor names, but the public is learning that they have real worth."